



## Climate variability, social and environmental factors, and ross river virus transmission: Research development and future research needs

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### Abstract:

**BACKGROUND:** Arbovirus diseases have emerged as a global public health concern. However, the impact of climatic, social, and environmental variability on the transmission of arbovirus diseases remains to be determined. **OBJECTIVE:** Our goal for this study was to provide an overview of research development and future research directions about the interrelationship between climate variability, social and environmental factors, and the transmission of Ross River virus (RRV), the most common and widespread arbovirus disease in Australia. **METHODS:** We conducted a systematic literature search on climatic, social, and environmental factors and RRV disease. Potentially relevant studies were identified from a series of electronic searches. **RESULTS:** The body of evidence revealed that the transmission cycles of RRV disease appear to be sensitive to climate and tidal variability. Rainfall, temperature, and high tides were among major determinants of the transmission of RRV disease at the macro level. However, the nature and magnitude of the interrelationship between climate variability, mosquito density, and the transmission of RRV disease varied with geographic area and socioenvironmental condition. Projected anthropogenic global climatic change may result in an increase in RRV infections, and the key determinants of RRV transmission we have identified here may be useful in the development of an early warning system. **CONCLUSIONS:** The analysis indicates that there is a complex relationship between climate variability, social and environmental factors, and RRV transmission. Different strategies may be needed for the control and prevention of RRV disease at different levels. These research findings could be used as an additional tool to support decision making in disease control/surveillance and risk management.

**Source:** <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2599750>

### Resource Description

#### Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

#### Exposure :

weather or climate related pathway by which climate change affects health

Unspecified Exposure

# Climate Change and Human Health Literature Portal

## **Geographic Feature:**

resource focuses on specific type of geography

None or Unspecified

## **Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Australasia

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Infectious Disease

**Infectious Disease:** Vectorborne Disease

**Vectorborne Disease:** Mosquito-borne Disease

**Mosquito-borne Disease:** Ross River Virus

## **Intervention:**

strategy to prepare for or reduce the impact of climate change on health

A focus of content

## **Medical Community Engagement:**

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

## **Resource Type:**

format or standard characteristic of resource

Review

## **Timescale:**

time period studied

Time Scale Unspecified

## **Vulnerability/Impact Assessment:**

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content

